

**SELECTION OF NEUROSTIMULATOR PARAMETER  
CONFIGURATIONS USING BAYESIAN NETWORKS**

**ABSTRACT**

In general, the invention is directed to a technique for selection of parameter configurations for an implantable neurostimulator using Bayesian networks. The technique may be employed by a programming device to allow a clinician to select parameter configurations, including electrode configurations, and then program an implantable neurostimulator to deliver therapy using the selected parameter configurations. In operation, the programming device executes a parameter configuration search algorithm to guide the clinician in the selection of parameter configurations. The search algorithm relies on a Bayesian network structure that encodes conditional probabilities describing different states of the parameter set. The Bayesian network structure provides a conditional probability table that represents causal relationships between different parameter configurations. The search algorithm uses the Bayesian network structure to infer likely efficacies of possible parameter configurations based on the efficacies of parameter configurations already observed.